



THE UNIVERSITY OF  
**SYDNEY**  
—  
Business School



**MONASH**  
University

# Key Centre Annual Report 2018

The Commonwealth Key Centre  
of Teaching and Research  
in Transport Management

Institute of Transport Studies  
Monash University

<https://www.monash.edu/engineering/its>

Institute of Transport and Logistics Studies  
The University of Sydney

<http://sydney.edu.au/business/itls>

Institute of Transport and Logistics Studies  
The University of Sydney  
NSW 2006

March 2019

Centres Coordinator  
Australian Research Council  
GPO Box 2702  
Canberra ACT 2601

Dear Centres Coordinator,

I hereby present to you, in accordance with the Australian Research Council's requirements for continued Key Centre status, the report of the proceedings and outputs for the Commonwealth Key Centre of Teaching and Research in Transport Management (established 1995) for the year ended 31 December 2018.

A handwritten signature in black ink, appearing to read 'D Hensher', is positioned above the typed name of the sender.

Professor David Hensher

Key Centre Director  
Director, Institute of Transport and Logistics Studies

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# Constitution

The primary object of the Key Centre is to undertake graduate teaching, executive programs, grant and contract research and development in the fields of transport, logistics, and supply chain management studies.

The work of the Key Centre also has the following objectives:

- To provide a focus for University work in areas of transport and logistics management and to establish an ambience attractive to those committed to excellence in graduate transport, logistics and supply chain management programs and research.
- To collaborate, to the fullest extent possible, with other parties having an interest in transport, logistics and supply chain management studies and its applications.
- To offer specialised training courses, workshops, short courses and seminars on topics of interest in the area of transport, logistics and supply chain management.
- To seed the development, in Australia, of innovative ideas in transport, logistics and supply chain policy and professional practice in which the Key Centre plays a role.

These objectives are achieved by the Key Centre through:

- developing and offering graduate transport and logistics management programs, industry programs, certificates, executive programs and short courses;
- bringing high quality transport, logistics and supply chain management programs to people outside Sydney and Melbourne (both nationally and globally), as well as widening the offerings of courses within Melbourne and Sydney, through access to courses provided by both ITLS-Sydney and Monash ITS;
- contributing to Australia's growing participation in the Asia Pacific region in a leadership role in transport, logistics and supply chain management;
- widening the range of courses available for middle level professional managers in critical areas of transport, logistics and supply chain management not currently served;
- equipping managers in all disciplines (i.e., engineering, economics, planning), the small business sector and local government to succeed in the face of technological, economic and institutional change;
- building on the recognised need for stronger links between education of engineers, planners, policy analysts and managers in transport, logistics and supply chain management;
- undertaking research to develop state-of-the-art management practices and technical methods; and
- transferring the knowledge developed through research to client groups through the Key Centre's publications, workshops, conferences, seminars, and by participation in networks of transport, logistics and supply chain stakeholders.

# Teaching and Learning

## Award Programs

### Undergraduate

In 2018 the Monash Institute of Transport Studies continued to deliver transport units in the Bachelor of Engineering program on both the Australian (Clayton) and Malaysian (Kuala Lumpur) campuses. Over 650 students completed the two core units (CIV2282 Transport and Traffic Engineering and CIV3282 Road Engineering) in 2018 and a further 370 completed the two final year electives (CIV4283 Transport Planning and CIV4284 Traffic Systems). Those units are part of undergraduate civil engineering degrees co-accredited under both the Australian and Malaysian Engineering Education Accreditation Systems. The Transport Planning unit (CIV4283) was offered as an intensive unit over three weeks in the middle of 2018. A group of 20 students were selected through a rigorous application process to undertake the study tour visiting Singapore, Kuala Lumpur (Malaysia), Shanghai and Suzhou (China). The trip was made possible as a result of funding provided under the Australian Government's New Colombo Plan, a program designed to encourage Australian students to learn more about, and from, our Asian neighbours.

### Postgraduate Coursework

The Master of Transport and Traffic degree has been reaccredited internally for a seven year period. That Masters degree, which is offered on-line, is structured around five core units and electives. A number of those units are also offered as part of a transport specialisation in the Master of Advanced Engineering, a rapidly growing on-campus program, taught on the Clayton campus. Close to 100 students were involved in the Masters degrees offered on the Clayton campus. Monash ITS also offers a Master of Transportation Systems degree in conjunction with South-East University in China. The program had 46 students enrolled in 2018 and is expected to reach its enrolment cap of 50 students in 2019.

In 2018, ITLS-Sydney continued to offer a suite of postgraduate courses in Logistics and Supply Chain Management, Transport and Infrastructure. Students are able to enter directly into the Master of Logistics and Supply Chain Management or articulate through the Graduate Certificate and Graduate Diploma. Alternatively, students can choose the Master of Commerce which includes three specialisations taught by ITLS academics: Logistics and Supply Chain Management; Aviation and Maritime Logistics and Management; and Infrastructure and Transport Management. In 2020, the focus of ITLS teaching in Transport Management will move to the new multi-faculty Master of Transport to be offered in conjunction with the Faculty of IT and Engineering and the Faculty of Architecture and Planning. ITLS academics also teach one undergraduate unit on Managing Food and Beverage Supply Chains and also teach into the highly ranked Master of Management and Master of Business Administration (MBA) programs.

### Postgraduate Research

The Key Centre has the largest higher degrees by research program in the transport and/or logistics field in Australia. In 2018, there were two PhD graduations at Monash ITS with 33 continuing student enrolments. At ITLS, there were four PhD and one MPhil graduations with 23 continuing students.

## Enrolments

Degree	Enrolments
<b>Institute of Transport Studies, Monash University</b>	
Doctor/Master of Philosophy	23
Master of Advanced Engineering (Transport)	64
Master of Transport and Traffic	32
Master of Traffic	4
Master of Transport	20
Master of Transport Systems	26
<b>Institute of Transport and Logistics Studies, University of Sydney</b>	
Doctor/Master of Philosophy	23
Master of Commerce	
Aviation and Maritime Management and Logistics	59
Infrastructure and Transport Management	23
Logistics and Supply Chain Management	223
Master of Logistics and Supply Chain Management	133
Masters of Transport Management	25
Graduate Diploma in Logistics and Supply Chain Management	15
Graduate Certificate in Logistics and Supply Chain Management	8
Graduate Certificate in Transport Management	2

Unit of study	Enrolments
<b>Institute of Transport Studies, Monash University</b>	
<b>Undergraduate:</b>	
Traffic and Transport Engineering (CIV2282) (Clayton and Malaysia Campuses)	415
Road Engineering (CIV3283) (Clayton and Malaysia Campuses)	239
Transport Planning (CIV4283)	20
Traffic Systems (CIV4284) (Clayton and Malaysia Campuses)	360
<b>Postgraduate:</b>	
Advanced Traffic Engineering (CIV5301)	26
Traffic Engineering and Management (CIV5302)	51
Quantitative Methods (CIV5303)	17
Intelligent Transport Systems (CIV5304)	33
Travel Demand Modelling (CIV5305)	45
Transport and Traffic Data (CIV5309)	13
Planning Urban Transport Systems (CIV5314)	59
Transport Economics (CIV5315)	11
Fundamentals of Urban Public Transport (CIV5316)	16
Intelligent Tsp Systems: Eng. and Management (CIV5318)	42
Quantitative Methods (CIV5319)	42
Case Studies in Transportation Systems (CIV5320)	47
Modelling Transportation Systems (CIV5406)	42
Sustainable Tsp Systems Planning (CIV5321)	46
Urban Public Transportation Systems (CIV5322)	47
<b>Institute of Transport and Logistics Studies, University of Sydney</b>	
<b>Undergraduate:</b>	
Managing Food & Beverage Supply Chains (ITLS2000)	48
<b>Postgraduate:</b>	
Foundations of Supply Chain Management (ITLS5000)	289
Transport & Infrastructure Foundations (ITLS5100)	67
Quantitative Logistics & Transport (ITLS5200)	214

Supply Chain Planning and Design (ITLS6002)	137
Contemporary Procurement (ITLS6003)	128
Disaster Relief Operations (ITLS6007)	58
Production and Operations Management (ITLS6008)	153
Logistics & Supply Chain Project (ITLS6090)	57
Global Freight Logistics Management (ITLS6101)	139
Strategic Transport Planning (ITLS6102)	16
Sustainable Transport Policy (ITLS6103)	44
Applied GIS and Spatial Data Analytics (ITLS6107)	171
Transport & Infrastructure Systems (ITLS6190)	17
Ports Management (ITLS6301)	30
Airline Strategy & Supply Chains (ITLS6400)	66
Airport Management (ITLS6401)	110
Decision Making on Mega Projects (ITLS6500)	34
Infrastructure Financing (ITLS6501)	65

# Professional Development

## **Bus Safety Management Program (BSMP) for Bus Operators**

The program was introduced in 2011, established by Monash ITS in consultation with Transport Safety Victoria (TSV) to provide bus operators with the appropriate skills to offer bus services which meet regulatory and compliance requirements in Victoria. The course comprises of two subjects namely Introduction to Bus Safety and Safety Risk Management for Bus Operators. To maintain the integrity and the relevance of the course, ITS-Monash staff work closely with Transport Safety Victoria and the Bus Association of Victoria (BusVic). Following a review of the program in 2017, in 2018 the program was transformed from a fixed semester, paper-based model to a flexible, online format, with progressive assessment on a staged basis. Developing and maintaining a proactive safety culture is now a key focus. The flexible, online format has been well received by TSV, the bus industry and course participants. In 2018 the course attracted 118 enrolments.

## **Bus Business Management Program (BBMO) for Bus Operators**

The program was launched by Monash ITS in 2012, providing potential bus service contractors with business management skills appropriate to the industry. It is an essential requirement for all service bids by Victorian bus companies. The course incorporates the two subjects from the Bus Safety Management Program for Bus Operators (mentioned above), along with two additional subjects: Financial Management for Bus Operators and Business Development for Bus Operators. The format of the two additional subjects will be reviewed in 2019. In 2018 the course attracted seven enrolments.

## **Bus and Coach Accreditation Scheme Online Training Course**

The Bus and Coach Operator Accreditation Scheme Online Training Course attracted 174 enrolments in 2018. This online course is approved by Transport for NSW as meeting the accreditation requirement of competency to operate bus and coach services; to meet the requirement of being competent applicants must pass the course examination. The course includes four modules: i) Accreditation; ii) Management Information System; iii) Vehicle Maintenance Management System; and iv) Safety Management Systems. The training is delivered through online learning materials including notes, case studies, online quizzes, and a discussion board.

## **Certificate of Transport Management**

The Certificate of Transport Management program (including the Certificate of Transport Management Refresher) had a total of 46 enrolments in 2018, with participants from the bus industry and their suppliers (from NSW and interstate). The program at ITLs-Sydney is recognised as an important industry qualification for middle and senior management, and an excellent opportunity for career development. Participants are introduced to the latest developments in the industry and provided with knowledge and skills in management, planning and policy areas central to the success of the bus and coach industry, to operators, suppliers and consultants. The four-day program includes presentations by industry representatives, specialist consultants and academic experts, designed to develop practical skills for the industry, as well as interactive exercises. The networking benefits are an important aspect of the program. The course content is reinforced by four assignments completed after the course. The Certificate of Transport Management is supported by Transport for NSW, the State Transit Authority, BusNSW, and private operators.

## **Discrete Choice Analysis: Models, Estimation and Applications**

Almost without exception, everything human beings undertake involves a choice. In recent years there has been a growing interest in the development and application of quantitative statistical methods to study choices made by individuals or groups with the purpose of gaining



a better understanding both of how choices are made and of forecasting future choice responses. Courses in discrete choice modelling and choice experiment design have been offered by ITLS-Sydney since 2006 and are presented by world experts in the field: Professors David Hensher, Professor William Greene and Professor Michiel Bliemer, and Dr Andrew Collins. With participants travelling from as far as South Africa, Canberra, South Australia and Queensland, the week-long Discrete Choice Analysis course had 34 attendees in 2018.

### **Certificate of Railway Planning and Operations**

The Certificate of Railway Planning and Operations which introduces students to the key elements of railway planning and operations was launched in 2018. The three-day course is delivered by Dr Nigel Harris, one of Britain's leading railway planners. Topics covered include management and business planning, understanding the railway market/environment, passenger behaviour, infrastructure design and timetabling. The course was offered over three days in June 2018, attracting 21 enrolments including participants from Transport for NSW, Roads and Maritime and various consultancy firms.

### **Introduction to Big Data**

This short course provides transport researchers with the knowledge and tools to manage and process big data databases and programming for transport analytics. Taught over four days, this course features both lectures and practical tutorials. Students are introduced to relational databases, enabling them to store, manage and retrieve data. Our introduction to programming gives students the tools to create algorithms to process raw data, retrieve data from APIs and merge datasets to make them useable for a variety of transport analyses including statistical modelling and spatial analysis. The course was offered over four days in July 2018 and attracted 22 enrolments.

# Student Awards

The Key Centre recognises the achievements of its students and alumni through industry and government sponsored prizes that are presented at annual award ceremonies where our students and alumni join with our Board members, industry partners, and the sponsors of prizes to celebrate the success of our students.

ITS-Monash's award ceremony was held as part of the 2018 Ogden Transport Lecture; prizes were awarded to:

- Renan Grace (VicRoads Prize for highest average mark in coursework Masters units)
- Arooran Sountharajah (ARRB-Monash Prize for excellence in postgraduate research in transport)
- Laurelle Bland (BusVic Award for the best overall performance in the Transport Management Course for Bus Operators)
- Donna Allan (Transport Safety Victoria Award for the best overall performance in the Safety Management Course for Bus Operators)
- Gerald Clarke (Dyson Group Award for best performance in Safety Management Course, Subject 5101: Introduction to Bus Safety)
- Donna Allan (Crown Coaches Award for the best performance in the Safety Management Course, Subject 5102 Safety Risk Management for Bus Operators)
- Laurelle Bland (Driver Group Award for the best performance in the Transport Management Course, Subject 5103 Financial Managements for Bus Operations)
- Angus Christian (Ventura Group Award for best performance in Transport Management Course, Subject 5104: Business Development for Bus Operators)

ITLS-Sydney's 2018 Awards Presentation Evening was presided over by Dr Alastair Stone, Chair of the Board of Advice. The guest speaker was Mr Kevin Anderson MP, Parliamentary Secretary for Regional Roads, Maritime and Transport. Prizes were awarded to:

- Mr Alvin Mejia - Peter Koning Memorial Award for the highest academic achievement in the Master of Transport Management
- Mr Andi Setiawan - GS1 Australia Prize for the highest academic achievement in the Supply Chain Visibility unit of study (ITLS6004)
- Ms Saraa Chogsom - Mrs Ma Ching Prize to an international student for the highest academic achievement in a transport, infrastructure and/or logistics and supply chain management specialisation in the Master of Commerce
- Ms Yawen Jiang - Supply Chain & Logistics Association of Australia Award for Excellence for the highest academic achievement in the Master of Logistics and Supply Chain Management
- Dr Camila Balbontin - Institute of Transport and Logistics Studies Prize for excellence in postgraduate research in transport, logistics or supply chain management
- Mr Robert Gemmell - BusNSW prize for best overall performance in the Certificate of Transport Management

# Research and Consultancy

FUNDING AWARDED IN 2018

## Australian Research Council Discovery Project Grants

### **Improving external validity of stated choice experiments (2018 -2020, AU\$462,480)**

Professor Michiel Bliemer

This project aims to deliver more accurate estimates of choice behaviour by reducing biases due to choice task complexity in surveys as well as design artefacts. Extracting 'true' preferences is challenging, not only due to possible hypothetical bias, but also due to increasingly complex choice tasks and the existence of design artefacts. This project will investigate the latter two in the context of marketing, transport, health and environmental economics and proposes new methodologies to extract preferences that more closely reflect true behaviour in real markets.

### **Scalable urban traffic control framework driven by distributed information (2018-2020, AU\$294,139)**

Professor Hai Vu and Dr Kun An

This project aims to develop a mathematical framework for an in-depth investigation of the role of information in a fundamental interaction between the traffic signal setting and self-interest route/departure time choice of road users. Traffic control is one of the oldest and most cost-effective solutions for the worsening congestion problem in many metropolitan areas. With the modern technological advancement, however, there remain fundamental mathematical challenges in taking that advantage to improve traffic control and combat congestion. The outcome will be insights into the use of information and algorithms that can provide efficient, robust and behaviour consistent (i.e. safe) traffic network management.

## National Health and Medical Research Council Grants

### **Health by stealth: Developing strategies to increase active and public transport (2018-2021, AU\$272,362)**

Verity Cleland (UTas), Kylie Ball (Deakin), Chris Blizzard (UTas), **Stephen Greaves (USyd)**, Kim Jose (UTas), Andrew Palmer (UTas), Alison Venn (UTas)

Globally, one third of adults are not active at recommended levels, putting them at major risk of disease and early death. A focus on healthy travel – walking, cycling, public transport – provides an under-explored opportunity to increase physical activity. However, we know little about travel behaviour patterns, the factors influencing these, and the best ways to increase active travel. This project will work closely with key stakeholders to address these important knowledge and practice gaps.

## Other External Research Grants and Contracts

### **Development of a Performance Metric to Identify Cost Efficiency Opportunities for Bus Businesses (Smart Bus/BRT Project) (2018-2019, AU\$75,000)**

Professor David Hensher, Dr Camila Balbontin and Yale Wong  
Bridgestone Corporation and Forest Coach Line

### **MaaS Stakeholder Engagement and Market Discovery (2018, AU\$18,421)**

Professor David Hensher, Emeriti Professor Corinne Mulley and Dr Chinh Quoc Ho  
International, Catapult Transport Systems, United Kingdom

**2018-19 Industry Fact Sheet**  
**(2018, AU\$20,000 over 1 year)**  
Professor David Hensher  
Bus Industry Confederation, Australia

**VicRoads**

**(2018, \$18,575)**

Dr Marilyn Johnson

Analysis of left hand turn intersections - additional observation sites.

**Transport Accident Commission (TAC)**

**(2016-2018, \$24,978)**

Dr Marilyn Johnson with Dr Ben Beck and Professor Peter Cameron from Monash University, Epidemiology and Preventive Medicine

Cyclist safety - measuring the distance of motor vehicles when passing cyclists.

**i-Sense Oakleigh: The Smart Connected Precinct**

**(2018-2019, AU\$700,000)**

Prof. Hai Vu and Prof. John Grundy (led and submitted by City of Monash)

Developing a digital infrastructure for a Smart Precinct.

Australian Government, Dept of Infrastructure, Regional Development and Cities

**SIGNIFICANT CONTINUING RESEARCH FUNDING**

**Australian Research Council Linkage Project Grant**

**Cycle Aware: Driving with bikes**

**(2016-2019, AU\$180,000)**

Dr Jennifer Bonham (University of Adelaide), **Dr Marilyn Johnson**, Prof Narelle Haworth (Queensland University of Technology, CARRS-Q)

This innovative approach to cyclist safety focuses on the education and training required by drivers to interact safely with cyclists. In a world-first it uses two ontologically diverse methodologies to examine how Australian drivers become cyclist aware and the education and training necessary to foster safe driver-cyclist interactions. It directly addresses the issues of cyclist road trauma and the growing on-road tensions between cyclists and drivers. This national approach to cycle aware driver education enhances opportunities for active travel and addresses the growing issue of inactivity. It provides a critical knowledge base for State and Territory driver education policies and a Cycle Aware module which will target learner drivers.

**Centre of Excellence in Bus Rapid Transit development (BRT+)**

**(2017-2022, AU\$457,164)**

Professor David A Hensher, Professor Rico Merkert, Dr. Chinh Quoc Ho, Wen Liu

<http://www.brt.cl/>

Volvo Research and Education Foundations, Sweden

Bus Rapid Transit is a Centre of Excellence (CoE) for Bus Rapid Transit (BRT) studies implemented in Santiago, Chile, and financed by the Volvo Research and Educational Foundations. This CoE was established in May of 2010 and is working as a consortium of five institutions: Pontificia Universidad Católica de Chile, Massachusetts Institute of Technology, University of Pretoria, The University of Sydney, and World Resources Institute Ross Center for Sustainable Cities. The main goal of the CoE is to develop a new framework for planning, design, financing, implementation and operation of BRT in different urban areas, giving clear guidelines to decision makers on when and how BRT projects can effectively enhance mobility and meet accessibility needs. These guidelines will be a major milestone to change the way decision makers address investment and design plans for configuring urban mobility systems. An essential goal of the CoE is to identify elements which are transferable between existing and prospective BRT systems and elements that are project site specific.

### **iMOVE Co-operative Research Centre (CRC) (2017-2026)**

The Federal Government has granted a group of nearly fifty leading industry and research organisations known as the iMOVE Co-operative Research Centre (CRC), a total of \$55 million over ten years to explore intelligent transport systems including self-drive vehicles. Key members of the iMOVE CRC include Institute of Transport and Logistics Studies (ITLS) and the University of Sydney's Faculty of Engineering and IT.

In 2018, ITLS was involved in the Facility and Network Optimisation for Australia Post project valued at \$525,000 and which continues into 2019.

### **Jiangsu Industrial Technology Research Institute (2016-2019, 4Million RMB (\$760,000))**

**Dr Inhi Kim**, Professor Terry Liu from SEU, Professor Yifan Dai from THU

Collaborative Model of Green Travel in Intelligent City Integration platform

### **National Natural Science Foundation of China (2016-2020, 620,000 RMB (\$117,000))**

Dr. Yadan Yan from Zhengzhou University, **Dr. Inhi Kim**

The traffic operational reliability analysis and optimization design of connection lines between motorways and urban roads.

## **Consulting**

### **Mapping strategic links for Sydney Metropolitan bus services (2018, AU\$11,515)**

Emeriti Professor Corinne Mulley

Consultancy, Forest Coach Lines Pty Ltd, Australia

## **University Research Grants**

### **Nanoparticles and People: Consumer Behaviour and Regulatory Frameworks (2018, AU\$42,000)**

Associate Professor Matthew Beck

Nano-technology involves materials at the atomic or 'nano' scale; a strand of human DNA is 2.5 nano-metres thick. The benefits of this technology are many, however the impact of this technology on people is unknown and there is virtually no research on how exposed consumers are to nanoparticles. The aim of this cross-faculty project is to fill this research gap and doing so will have significant impact in the policy and regulatory sphere, but also result in a number of high-level journal publications and establish the University of Sydney internationally as a leading contributor to the nano-people-regulatory interface.

Business School - General Research Grant.

### **Towards accurate short-term predictions in state-of-the-art traffic flow modelling (2018, AU\$33, 926 + AU\$16,055 industry contribution)**

Professor Michiel Bliemer, Dr Mark Raadsen and DAT.Mobility, Netherlands

We aim to develop methods to improve (short-term) traffic flow predictions on motorways and urban roads. On motorways we focus on embedding traffic management measures such as dynamic lane closures and dynamic speed limits into a state-of-the-art traffic flow model in a consistent fashion. On urban roads, we explore possibilities to calibrate the throughput of intersections against measured demand (loop detectors), accounting for traffic signals. Currently, neither theory nor solution algorithms exist to consider these two important transport aspects in conjunction with state-of-the-art dynamic traffic flow models. The event-based general link transmission model (eGLTM) proposed by Bliemer and Raadsen (in press) and Raadsen and Bliemer (in press) is one of the most sophisticated dynamic traffic flow models available and has been implemented in commercial software (OmniTRANS and Aimsun). This project aims to further develop this model with the above-mentioned extensions.

Business School - Industry Partnership Grant

**Evaluating and Framing Sustainability Priorities of Supply Chain Managers  
(2018, AU\$10,000)**

Professor Behnam Fahimnia

University of Sydney/University of Geneva Partnership Collaboration Awards

**Development of a Performance Metric to Identify Cost Efficiency Opportunities for Bus  
Businesses**

**(2018, AU\$25,000)**

Professor David Hensher

University of Sydney Business School Engaged Activities (EnAct) Support Scheme.

**MI Seed funding scheme**

**(2018, \$42,493)**

Dr Marilyn Johnson with Dr Robbie Napper (MADA) and Dr Vanessa Johnston (Monash Law)

Left turn negotiations between cyclists and drivers

**Engineering Seed Fund Scheme**

**(2018, \$25,000)**

Dr. Inhi Kim

Dynamic traffic assignment model on Domino with road pricing

**MI Seed funding scheme**

**(2018, AU\$75,000)**

Prof. Hai Vu with Dr Selby Coxon, Dr Barrett Ens, Dr Steve OHern, Prof. Tim Horbery and Prof.

Andrew Parkes (UK)

Driving simulator for AV

# Engagement

## Public Lectures and Seminars

### Leadership and Policy Seminar Series

Established in 2003, the ITLS-Sydney Leadership and Policy Seminar Series benefits from leading national and international experts (CEOs, Visiting Professors etc.) speaking on topical transport and logistics issues relevant to business and academia. The seminar series attracts a broad audience from industry, government and academia as well as our own faculty and research students. The seminar conveners are Professor Rico Merkert and Dr Jyotirmoyee Bhattacharjya. The following presentations were given in 2018:

#### **Value creation through supply chain**

14 February 2018

Anisa Makalic, General Manager Retail Supply Chain Caltex

#### **The Impact of Baggage Fees on Passenger Demand, Airfares, and Airline Operations in the US**

20 February 2018

Professor Martin Dresner, University of Maryland

#### **Charter and Cargo – Niche airline businesses delivering low risk, high margin revenue**

14 March 2018

Merren McArthur, Chief Executive, Virgin Australia Regional Airlines and Cargo

#### **Urban Transport Policy-making – changing perspectives and consequences**

28 March 2018

Professor Peter Jones, University College London

#### **Anticipating a World of Shared Autonomous Vehicles: Cost, Energy, and Urban System Implications**

4 April 2018

Dr Kara Kockelman, Dewitt Greer Professor of Civil, Architectural & Environmental Engineering at the University of Texas at Austin

#### **The need for collaboration between authorities and operators in determining the terms and conditions of public transport contracting**

4 April 2018

Professor Jackie Walters, University of Johannesburg

#### **Is MaaS Transit the Future of Mass Transit?**

2 May 2018

Andy Taylor, Director of Strategy, Cubic Transportation Systems Inc

#### **Air transport: creating value for investors and the wider economy**

6 June 2018

Brian Pearce, Chief Economist, IATA

#### **The use of system and data in a food service environment to control and manage product distribution**

18 June 2018

Leigh Rollason, General Manager, Operations Procurement and Analytics, Compass Group

### **Mobility as a Service (MaaS)**

18 July 2018

Professor David Hensher; Professor Emerita Corinne Mulley; Dr Chinh Ho; Honorary Professor John Nelson; Dr Tim Cooper (Co-Founder and Head of Algorithms, SkedGo); Yale Wong (PhD Student),

### **Delivering better transport with data**

19 July 2018

Lauren Sager Weinstein, Transport for London (TfL)

### **Regulating road-safety and autonomous vehicles: Time for an insurance market approach?**

12 September 2018

Dr Richard Tooth, Director, Sapere Research Group Limited

### **The drivers and challenges of achieving supply chain visibility in the national freight sector**

7 November 2018

Bonnie Ryan, Senior Manager, Freight, Logistics and Industrial Sectors, GS1 Australia

### **Industry 4.0 in Supply Chain Management and Logistics**

14 November 2018

Olaf Schatteman, Accenture

### **Mobility as a Service: The Swedish story (thus far)**

28 November 2018

Göran Smith, Chalmers University of Technology, Sweden

### **Does Santa Claus really have such a difficult job?**

12 December 2017

John Allen, Director Horizon inventory

## **Ogden Transport Lecture**

Monash ITS' Ogden Transport Lecture is a free public lecture that was initiated in 2001 to recognise the key role which Ken Ogden played in the formation and development of the transport program at Monash University.

### **Driverless vehicles and the future of urban transport: Beyond the hype**

19 November 2018

Professor Bart van Arem, Delft University of Technology, The Netherlands

## **The Inaugural Transport Research Association of NSW (TRANSW)**

15 November 2018

**Opening Symposium:** Chris Bennetts, Transport for NSW

**Research Hub and Strategic Research Directions:** Sherri Fields, Transport for NSW

**Keynote 1: Can we simulate how traffics accidents occur?** Professor Hans van Lint (Delft University of Technology, The Netherlands)

**Keynote 2: Innovative travel demand modelling using novel data sources:** Professor Stephane Hess (University of Leeds, UK)



# Committees

- **Dr Kun An**  
United States Transportation Research Board Committees: Transportation Network Modelling TRB - ADB30 (Friend)
- **Dr Matthew Beck**  
United States Transportation Research Board Committees: Stated Response (Chair)
- **Professor Michael Bell**  
International Symposium on Transport Network Reliability Scientific Committee (Chair, International Advisory Committee); United States Transportation Research Board Committee: Intermodal Freight; Member of International Advisory Committee, Hong Kong Society for Transport Studies (HKSTS)
- **Professor Michiel Bliemer**  
Triennial Symposium on Transport Analysis, Australia, International Scientific Committee of the Dynamic Traffic Assignment Conference; United States Transportation Research Board Committees: Network Modelling, Survey Methods; International Symposium for Transport Network Reliability, Australia
- **Dr Geoffrey Clifton**  
Australian Timetable Association (Convenor, Sydney Branch)
- **Professor Graham Currie**  
United States Transportation Research Board Committee: Light Rail Transit Systems (Chair); Land Transport Authority of Singapore, Research Advisory Board Member; Conference Organising Committee - National Streetcar and Light Rail Conference, New Jersey USA; Track Chair - Public Transport - Australasian Transport Research Forum
- **Dr Alexa Delbosc**  
Journal of transport and Land Use (editorial panel member); United States Transportation Research Board Committees: Social and Economic Factors of Transportation (Paper Review Coordinator), Traveller Behaviour and Values (Friend); Australasian Transport Research Forum Scientific Committee Member.
- **Professor Stephen Greaves**  
Travel Survey Conference International Steering Committee; Australasian Transport Research Forum Conference Organising Committee; United States Transportation Research Board Committees: Air Quality, New Technologies in Travel Surveys
- **Professor David Hensher**  
Transport for NSW: Advisory Panel on the Long Term Transport Master Plan, Benchmarking Program Panel; Infrastructure Australia reference panel on public transport; Advisory Board, Institute of Transport and Logistics Studies (Africa), South Africa; International Conference Series on Competition and Ownership in Land Passenger Transport, International Steering Committee (Chair), Partner, Volvo, Educational and Research Foundation Centre of Excellence in Bus Rapid Transit, Chile
- **Dr Chinh Ho**  
Permanent Scientific and Technical Committee, Cooperation for Urban Mobility in the Developing World
- **Dr Marilyn Johnson**  
Amy Gillett Foundation Research and Policy Committee, Australasian College of Road Safety (Vice-President, National Executive Committee, Victorian Chapter Chair), Australasian Road Safety Conference (Organising Committee, Scientific Committee), Melbourne Metro Rail Authority Public Engagement and Influence Working Group, Road Safety Education Scientific Advisory Committee
- **Dr Inhi Kim**

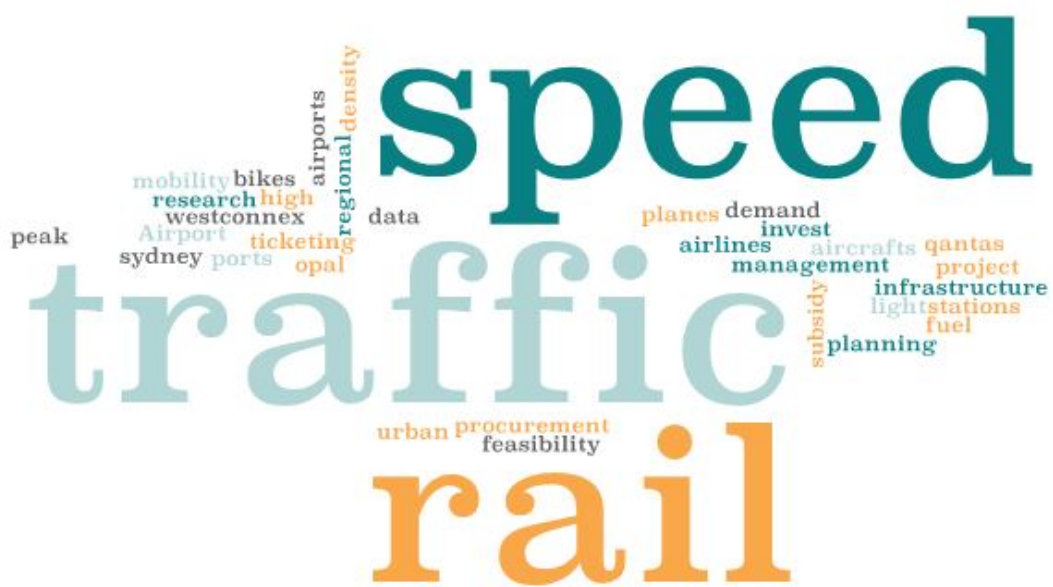
- United States Transportation Research Board Committees: Highway/Rail Grade Crossings TRB - AHB60 (Standing); International Conference on Ambient Systems, Networks and Technologies (Program committee), ITS Asia Pacific Forum 2020( Program Committee), Korean journal of intelligent transportation system(editorial member), International journal of computer and software engineering(editorial member)
- **Martin Locke**  
Board member, Infrastructure Partnerships Australia, Australia.
  - **Associate Professor Rico Merkert**  
United States Transportation Research Board Committees: Air Cargo, Aviation Economics, Light Commercial and General Aviation
  - **Professor Corinne Mulley**  
Executive Board, World Symposium of Transport and Land Use Research (Chair)
  - **Professor Geoff Rose**  
Australasian Transport Research Forum: National Executive Committee and Chair Scientific Committee for the 2018 ATRF Conference; World Conference on Transport Research (Local Area Representative); United States Transportation Research Board Joint Sub-committee Co-Chair: Emerging Vehicles and Low Speed Transportation
  - **Professor John Kenneth Stanley**  
Member, Advisory Committee, Institute of Transport Studies, Monash University, Australia, 1995 - present.
  - **Dr Susilawati**  
United States Transportation Research Board Committees: Geographic Information Science and Applications (Friend); United States Transportation Research Board Committees: Urban Transportation Data and Information Systems (Friend); Indonesia: International Symposium on Transportation Studies for Developing Countries
  - **Professor Hai L. Vu**  
IET Intelligent Transport Systems, Associate Editor; United States Transportation Research Board Committees: Artificial Intelligence and Advanced Computing Applications: ABJ70 (Friend)

# Awards

- **Dr Camila Balbontin**  
The Institute of Transport and Logistics Studies (ITLS) Prize for research excellence in transport or logistics, The University of Sydney, Australia, 2018.
- **Dr. Andrew T Collins**  
Dean's Citation for Teaching S1 2018, University of Sydney Business School, Australia, 2018.  
For ITLS6002 Supply Chain Planning and Design
- **Dr Alexa Delbosc**  
Identified as the national Field Leader in transport research by *The Australian*
- **Professor Behnam Fahimnia**  
Dean's Citation for Teaching S1 2018, University of Sydney Business School, Australia, 2018.  
For ITLS6090 Logistics and Supply Chain Project
- **Professor Stephen P Greaves**  
University of Sydney Business School Research Engagement Award, 2018
- **Monash University**  
Ranked number one in the world in the field of Transportation by the Centre for World University Rankings (WUR).
- **University of Sydney**  
The Shanghai Ranking Consultancy ranked the University at number one in Australia and six internationally for transportation science and technology in the annual Academic Ranking of World Universities (ARWU).

## Media

The following word clouds represent the main themes and topics from media coverage featuring ITLS and Monash researchers in 2018. Fourteen ITLS researchers featured in over 100 separate media appearances including national and international newspapers, television, radio and websites. Monash had three of their researchers feature on television, newspapers and podcasts.



## Centre Outputs



**Australian Government**

**Australian Research Council**  
***ARC Centres of Excellence***

Centre Outputs and Detailed Income and Expenditure  
Report  
(CODIE)

Centre Name:		ARC Centre of Excellence of Teaching and Research in Transport Management
Centre ID: (eg CE1100006)		NO95/08214
Calendar Year Reported:		2018
Centre Admin. Organisation:		The University of Sydney

## CENTRE OUTPUTS AND DETAILED INCOME AND EXPENDITURE REPORT (CODIE) GUIDE

CODIE data from individual Centres is for use within the ARC and will not be published. Consolidated figures may be published, used for evaluation purposes or to promote the overall achievements and/or outcomes of the ARC Centres.

The ARC is interested in tracking the development of the Centre as a focal point for research and as an attractive destination for high-quality researchers. The Outputs categories align Centre outputs with the outputs of other ARC schemes.

### Reporting requirements

- Centres **receiving** ARC centre funding must submit a completed CODIE (Certification, Outputs, Income, Expenditure, In kind, Personnel and Other ARC grants worksheets) along with five (5) copies of the Annual Report
- Centres **no longer receiving** ARC centre funding, but retaining their title, must submit a completed Outputs worksheet only from this CODIE along with one (1) copy of the Annual Report.

### To be noted when completing the CODIE:

- The CODIE is NOT a balance sheet. The total income does not necessarily have to balance the total expenditure.
- Headings should not be modified. New headings must only be entered under the "Other" category.
- Leave blank any rows that are not applicable to your Centre.
- New rows may be added to tables if more entries are required.
- All data must be for the 2018 calendar year ONLY.
- Insert Centre Details on sheet 1 (Title Page) before completing the remainder of the CODIE. These details will auto-fill across the worksheet.
- Example worksheets are provided. Please note the data in these examples are illustrative only and do not represent indicative amounts.

### Submitting your CODIE (due by 31 March each year)

To submit your CODIE please:

- Check the Centre name below is correct.
- Print this page and sign the Certification below.
- Print one (1) copy of each worksheet.
- Post this with the signed Certification page and five (5) paper copies (one for Centres no longer receiving ARC Centre funding) of the Centre's Annual Report to:

Centres Coordinator  
Australian Research Council  
GPO Box 2702  
Canberra ACT 2601

- [Email an electronic copy of this file to centres@arc.gov.au](mailto:centres@arc.gov.au)

### Certification

To be signed by an authorised officer of the Centre.

I hereby certify that the following sheets are an accurate representation of the outputs, income and expenditure of the:

ARC Centre of Excellence of Teaching and  
Research in Transport Management

covering the calendar year 2018 and that I am authorised to approve their submission.

Certified by:

Signature



Print Name

Professor David Hensher

Date

6-Mar-19

## Instructions

- Include outputs for ALL Centre activities (including those arising from Centre staff not named as Cis or PIs).
- Do not include any outputs from other ARC-funded projects or from work predominately completed before commencement of the Centre.
- If you are unable to differentiate between Centre outputs from other ARC-funded projects, these may be included in Column A. In these cases, the (double counted) outputs should also be acknowledged in Column D.
- Include only 2018 accepted and in-print books/articles. Do not include outputs that were listed in the 2017 CODIE.

Code	Type of Output	A Number of Centre outputs	B Number of outputs in Column A that included overseas involvement (i)	C Number of outputs in Column A that involved personnel external to the Centre (ii)	D Number of outputs in Column A also attributed as outputs of other ARC Projects (iii)
A1	Book – authored research	0	0	0	0
A2	Book – authored other	0	0	0	0
A3	Book – edited	0	0	0	0
A4i	Book – revision/new edition	0	0	0	0
A4	Book - translation	0	0	0	0
B	Book chapter	7	2	2	0
C1	Journal article – articles in scholarly refereed journal	97	43	69	13
C2	Journal article – other contribution to refereed journal	2	2	2	0
C3	Journal article – non-refereed article	0	0	0	0
C4	Journal articles – letter or note	2	0	0	0
C5	Unpublished reports (including commercial consultancies)	0	0	0	0
D	Major review	0	0	0	0
E1	Conference – full written paper-refereed proceedings	27	10	17	0
E2	Conference – full written paper-non-refereed proceedings	0	0	0	0
E3	Conference – extract of paper	0	0	0	0
E4i	Conference – edited volume of conference proceedings	0	0	0	0
E4	Conference – unpublished presentation	13	2	9	0
F	Audio-visual recording	0	0	0	0
G	Computer software (including digital maps, data, web outputs)	0	0	0	0
H	Designs	0	0	0	0
H2	Technical drawings	0	0	0	0
I	Patents - filed	0	0	0	0
I2	Patents - pending	0	0	0	0
J1i	Other creative works – major written or recorded work	0	0	0	0
J2i	Other creative works – minor written or recorded work	0	0	0	0
J3i	Other creative works – individual exhibition or original art	0	0	0	0
J4i	Other creative works – representation of original art	0	0	0	0
J1	Major creative works	0	0	0	0
J2	Creative work including in group exhibition, performance, recording or anthology	0	0	0	0
J3	Exhibition curatorship	0	0	0	0
K	Number of national collaborating institutions	9	0	0	0
L	Number of international collaborating institutions	22	0	0	0
M	Number of countries involved in collaboration	16	0	0	0
N	Number of countries from which international visitors originated	11	0	0	0
O	Number of international visitors	25	0	0	0
P	Number of overseas visits by Centre personnel	53	0	0	0
Q	Number of countries visited by Centre personnel	23	0	0	0
R1i	Training programs/teaching packages conducted	20	0	0	0
R1	Number of PhD students graduated	7	0	0	0
R2	Number of Masters students graduated	109	40	0	0
R3	Number of Honours students graduated	0	0	0	0
S1	Number of PhD students enrolled	57	14	0	0
S2	Number of Master students enrolled	573	46	0	0
S3	Number of Honours students enrolled	9	0	0	0
T	Number of early career researchers (within 5 years of PhD completion)	5	0	0	0

- (i) Outputs with overseas involvement – e.g. #journal articles with international co-authors, # international students enrolled/graduated
- (ii) Outputs with involvement from outside the Centre – e.g. # journal articles with co-authors not affiliated with the Centre
- (iii) Outputs which have been attributed elsewhere in ARC reporting, - e.g. Linkage Project final reports